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**Notice of Allowability**

Application No.

10/658,122

Examiner

Mike Stahl

Applicant(s)

TONEY, JAMES E.

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-8 and 15-26.
3. ☒ The drawings filed on 09 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

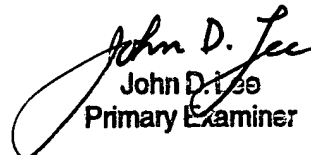
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 12/30/11/29/12/9/CS
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
John D. Lee  
Primary Examiner

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James Beyer on April 15, 2005.

The application has been amended as follows:

- At page 1, line 5, **replace** “\_\_\_/\_\_\_,\_\_\_” with “10/658,105”.
- At page 9, line 7, **delete** “For example, by way of illustration and not limitation, it is contemplated that”.
- **Cancel** claims 9-14.

### *Allowable Subject Matter*

Claims 1-8 and 15-26 are allowed. A statement of reasons for allowance follows. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Independent claims 1 and 2 are both directed to a wavelength separation device which includes a plurality of heterostructures, each heterostructure characterized by a distinct transmission bandwidth, each heterostructure defined by first and second bandgap regions which alternate in succession along the propagation direction, each of the first and second bandgap

Art Unit: 2874

regions having an optical bandgap with a distinct center wavelength. None of the prior art cited in the information disclosure statement or encountered during the Office search discloses or suggests a wavelength separation device which has all of the features required by claims 1 and 2. The references which are believed to be most pertinent are noted below.

Lin et al. (US 2001/0012149) discloses in fig. 7c a wavelength separation device which includes a plurality of first and second bandgap regions which alternate in succession. However, the alternation does not occur along a direction of propagation. The device of fig. 7a does have alternation along the direction of propagation, but neither it nor the fig. 7c device provides a distinct transmission bandwidth for each heterostructure as claims 1 and 2 require (only one design wavelength is reflected by the fig. 7a device as described at [0088]).

Claus et al. (US 2003/005646) discloses a wavelength separation device in fig. 4, but this device does not exhibit an alternation of first and second bandgap regions along a propagation direction (an alternation is being interpreted as having at least one repetition of the first bandgap region or the second bandgap region). There is no apparent motivation to modify Claus to include such an alternation.

Hamada (US 6707597), Hutchinson et al. (US 2003/0039446), Salerno et al. (US 2003/0123827), and Matsuda (US 6404947) are considered to be of general relevance and are also listed on the attached PTO-892 form.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Stahl at 571-272-2360. Inquiries of a general or clerical

Art Unit: 2874

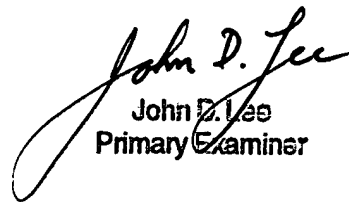
nature (e.g., a request for a missing form or paper, etc.) should be directed to the technical support staff supervisor at 571-272-1626. Official communications which are eligible for submission by facsimile and which pertain to this application may be faxed to 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MSS

Mike Stahl  
Patent Examiner  
Art Unit 2874

April 15, 2005

  
John D. Lee  
Primary Examiner